

## Revisional study on the subspecies of *Atrophaneura nox* (Lepidoptera, Papilionidae), with descriptions of two new subspecies

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**Abstract** *Atrophaneura nox* (Swainson, 1823) was described from Java, Indonesia, and is known to be widely distributed from the Malay Peninsula to Borneo, Sumatra, Java and their associated islands. Because of the wide geographical variations of wing pattern, this species has so far been divided into eleven subspecies. In this paper, we revise the taxonomical status of all the described subspecies and classified this species into fourteen subspecies including two new ones from the Banyak Islands and Singkep Island. After close re-examination, *Atrophaneura tungensis* Zin et Leow, 1982 from C. Sumatra turns out to be a subspecies of *A. nox*.

**Key words** *Atrophaneura nox*, *Atrophaneura nox hirokoe* ssp.nov., *Atrophaneura nox miekoe* ssp.nov., *Atrophaneura tungensis*, new locality.

### Introduction

*Atrophaneura nox* (Swainson, 1823) was described from Java, Indonesia, and is known to be widely distributed from the Malay Peninsula to Borneo, Sumatra, Java and their associated islands. Because of wide geographical variations in the wing pattern, this species has so far been divided into eleven subspecies (Tsukada and Nishiyama, 1982; Collins and Morris, 1985; Hanafusa, 1994; Gu, 1997). Recently we had an opportunity to examine rich material of this species from nearly all the known ranges including some new localities, and we reached the following conclusions. Among the eleven subspecies, *A. nox hainanensis* Gu, 1997 from Hainan Is., China, should be assigned to *A. varuna* (White, 1842), judging from the photograph with the original description, and *A. varuna astorion* (Westwood, 1842) becomes a senior synonym of *A. nox hainanensis* Gu, 1997 (**syn. nov.**). The male of *Atrophaneura tungensis* Zin et Leow, 1982, described from central Sumatra as a close relative of *A. nox*, is very similar to the N. Sumatran subspecies of *nox*, *A. n. henricus* (Fruhstorfer, 1899) and the S. Sumatran one, *A. n. solokanus* (Fruhstorfer, 1902), and the distribution areas of these three taxa do not overlap. We think that it is not a distinct species, but simply a subspecies of *A. nox* (*A. n. tungensis* Zin et Leow, 1982, **stat. nov.**). The population of W. Borneo is different from those of both N. and S. Borneo, especially in the female wing pattern, and is considered to have a distinct subspecific status. Jordan (1910) in “Seitz” stated that there are two forms of the N. Bornean subspecies, *A. nox noctis* (Hewitson, 1859), and that the male form *noctula* (Westwood, 1872) and its corresponding female form *strix* (Westwood, 1872) are separable from *noctis*. In our material from Borneo, specimens from W. Borneo well match Jordan’s *noctis*, and those from N. Borneo agree with the features of *noctula* in male and *strix* in female. Although the precise type locality of *noctis* is unknown to us other than “Borneo”, in this paper we adopt *noctis* for the W. Bornean subspecific name. On the other hand, Fruhstorfer (1898) used *noctula* as the species name “*Papilio noctula*” for the North Borneo population. So we propose to adopt *noctula* as the N. Bornean subspecific name. The population of the Banyak Is. and that of Singkep Is. are both different from the neighbouring subspecies, and two new subspecies are described for them. Before discussing the classification of the subspecies, we show the

following taxonomic change.

*Atrophaneura varuna astorion* (Westwood, 1842)

*Papilio varuna astorion* Westwood, 1842, *Ann. Mag. nat. Hist.* (1) **9**: 37.

*Atrophaneura nox hainanensis* Gu, 1997, *Butterflies in Hainan Is.*: 36, fig. 6; Wu, 2001, *Fauna sinica* (Insecta) **25**: 77, pl. 1, fig. 2 (♂) (as the published year 1998, not 1997), **syn. nov.**

As stated above, the holotype female of *Atrophaneura nox hainanensis* Gu, 1997 shown in the original description is identical to *Atrophaneura varuna astorion* (Westwood, 1842). Later, Wu (2001) mentioned *A. nox hainanensis* Gu, 1997 and *A. varuna astorion* (Westwood) both from Hainan Is., and illustrated a male specimen of *A. nox* in color, but did not show any specimens of the latter. The specimen figured by Wu (2001) is true *A. nox*, but we do not know whether or not this specimen is from Hainan Is. Prior to Gu (1997) and Wu (2001), Chou (1994) correctly illustrated both male and female of *A. varuna astorion* (Westwood) from Hainan Is., and we consider that *A. nox* is not distributed on this island.

### Classification of the subspecies group

On the basis of the wing pattern and geographical range, *A. nox* is considered to be classified into four subspecies groups: the *nox*, *smedleyi*, *erebus* and *noctis* subspecies groups.

### The *erebus* subspecies group

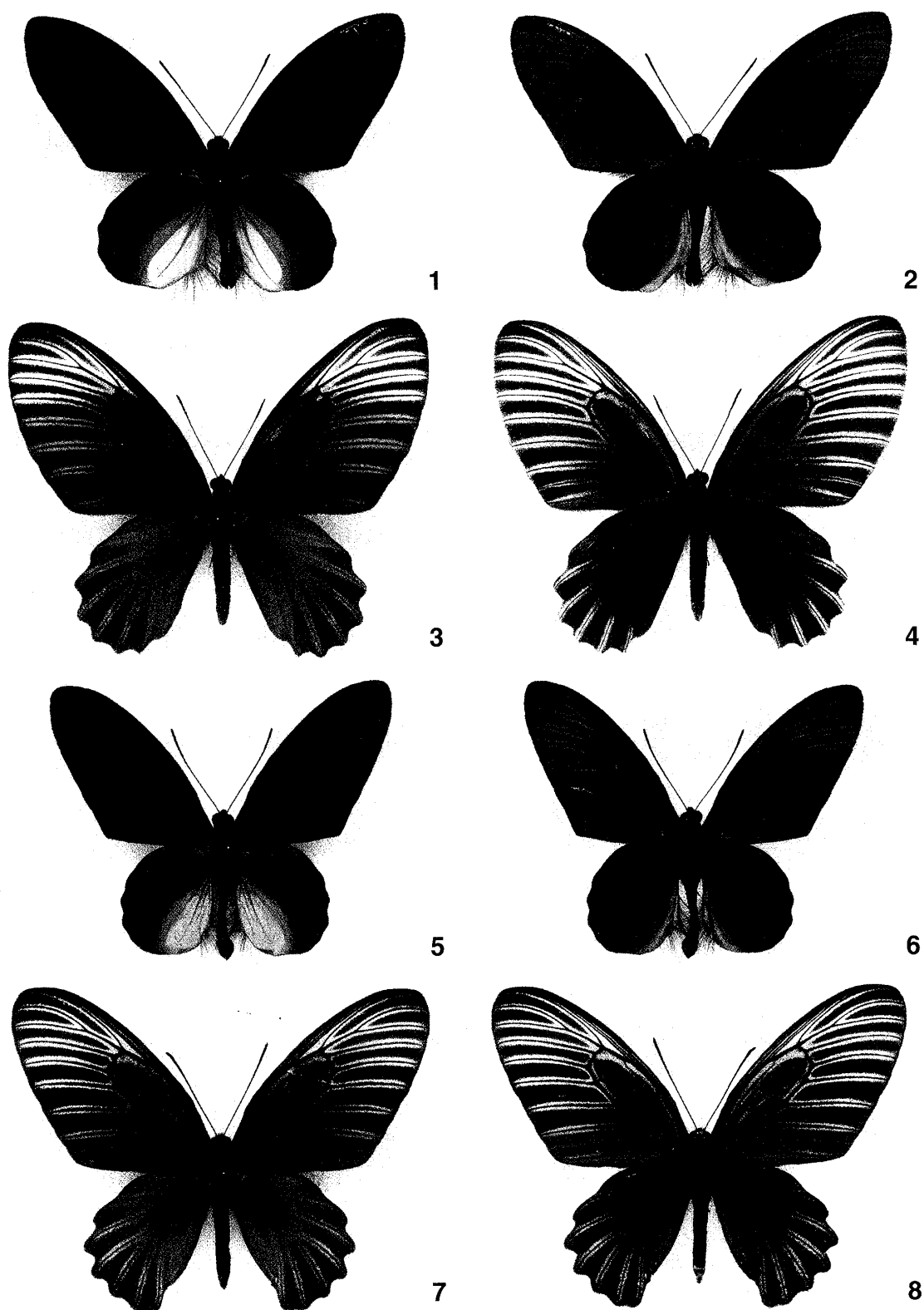
Constitution and specimens examined. *A. n. erebus* (Wallace, 1865) (the Malay Peninsula), 3 ♂ 3 ♀ (Figs 1–4); *A. n. henricus* (Fruhstorfer, 1899) (N. Sumatra), 3 ♂ 2 ♀ (Figs 5–8); *A. n. tungensis* Zin et Leow, 1982 (C. Sumatra), 7 ♂ 21 ♀ (Figs 9–12); *A. n. solokanus* (Fruhstorfer, 1902) (S. Sumatra), 8 ♂ 6 ♀ (Figs 13–16); *A. n. petronius* (Fruhstorfer, 1901) (Nias Is.), 2 ♀ (Figs 17–18); *A. n. subsp. n.* described below (the Banyak Isls), 7 ♂ 6 ♀ (Figs 19–22).

Range. Malay Peninsula, Sumatra, Nias, the Banyak Isls.

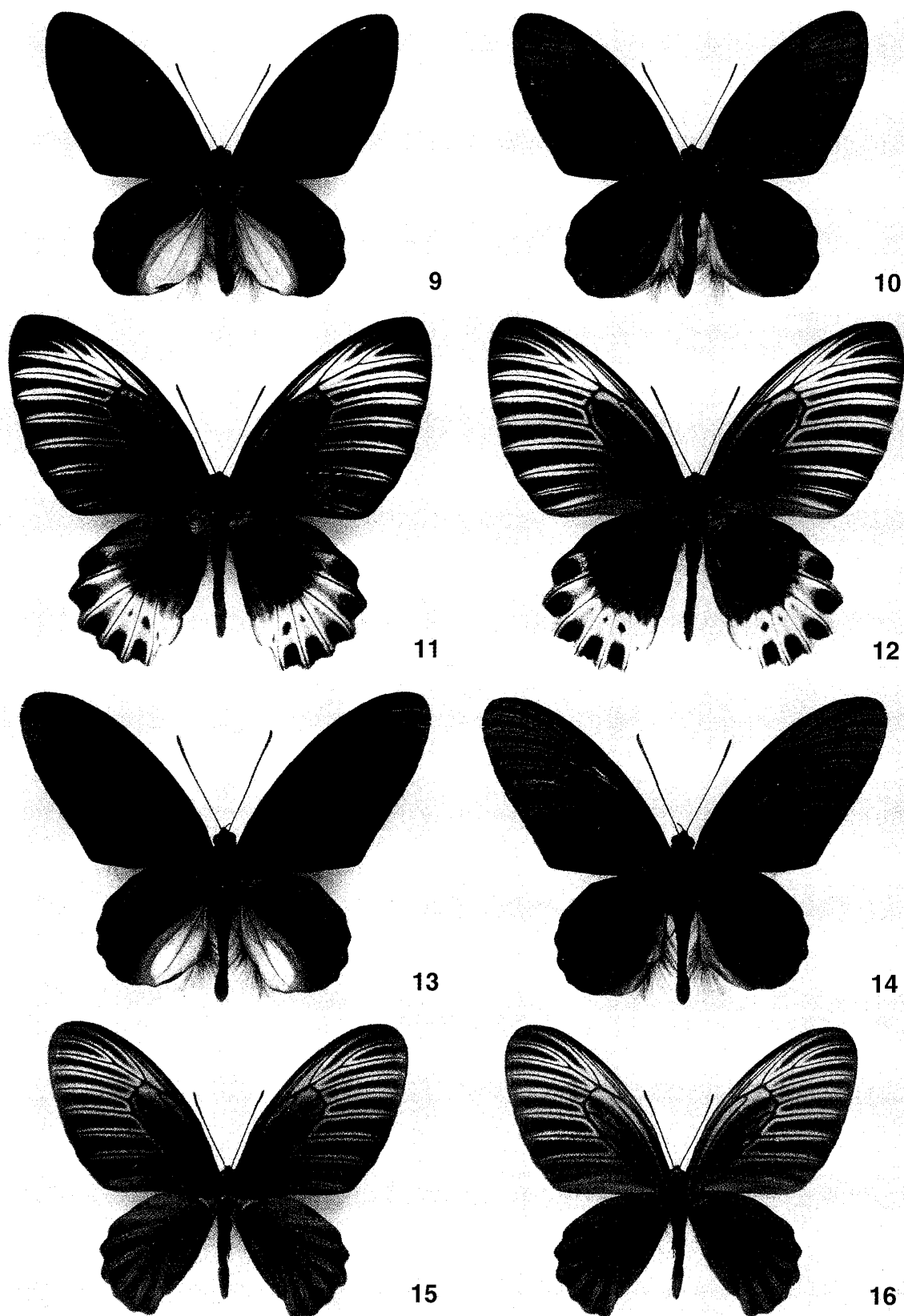
Both the male and the female have metallic color on the upperside of the fore- and hindwings, the female having an extremely strong metallic tone. In this group, subspecies from the Malay Peninsula and the Banyak Isls (described below) have the strongest metallic tone. Females of the subspecies from N. Sumatra, S. Sumatra and Nias Is. have a rather weaker metallic tone than those from the Malay Peninsula and the Banyak Isls, and they are also characterized by the forewing becoming lighter along the veins. These three subspecies, *henricus*, *solokanus* and *petronius* respectively, look very distinct compared with other subspecies. The subspecies from C. Sumatra, *tungensis*, is also distinct. The male of this subspecies has no clear points of differentiation from two other Sumatran subspecies: the female has a large white patch on the hindwing as in *Atrophaneura priapus* (Boisduval, 1836) and *A. hageni* (Rogenhofer, 1889), and the shape of the white patch is highly variable. Specimens from the Banyak Isls are different from the above-mentioned subspecies as described below.

*Atrophaneura nox hirokoe* Hirata et Miyagawa, **ssp. nov.** (Figs 19–22)

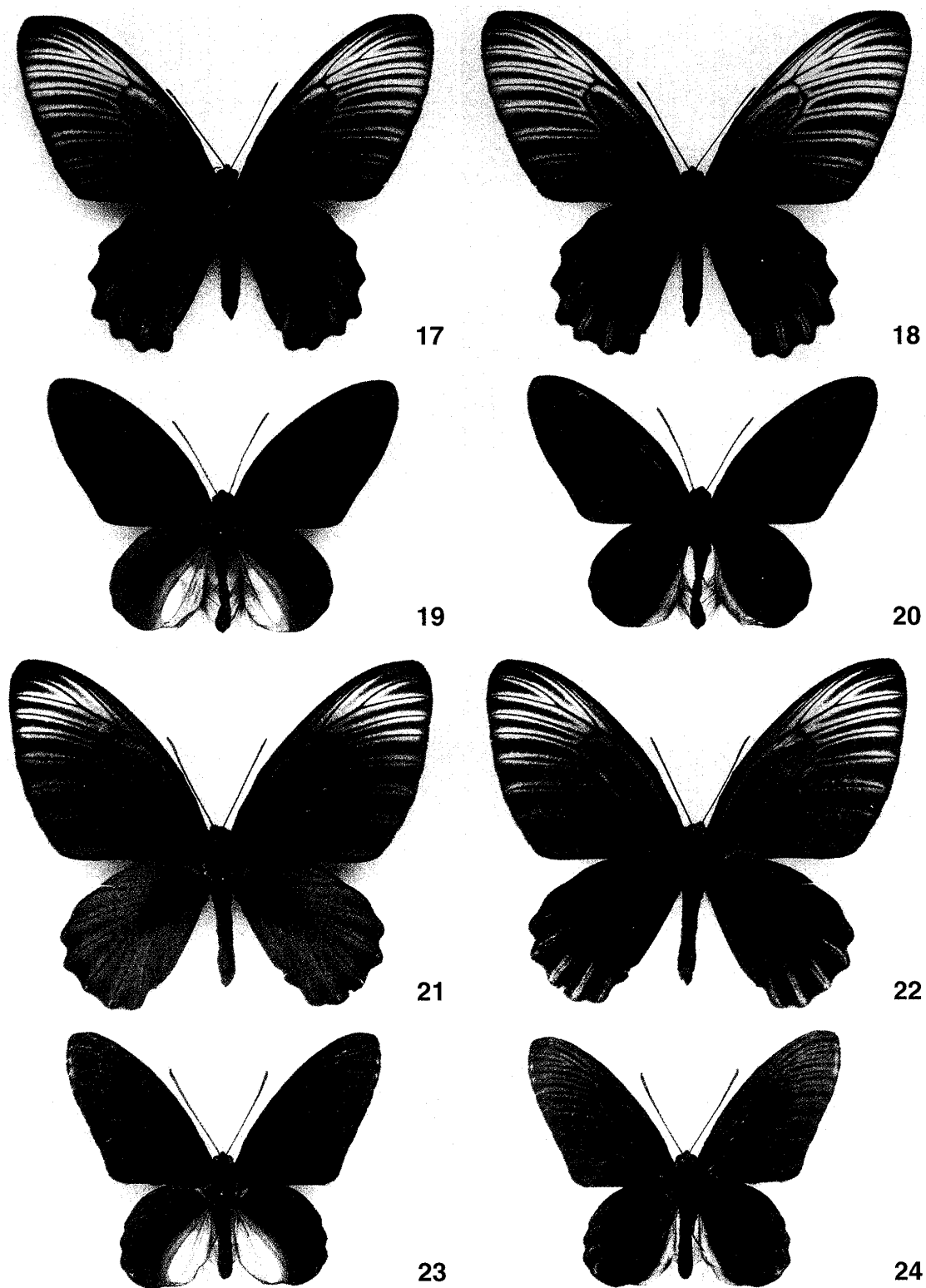
♂. Length of forewing 47–50 mm, almost the same as the Sumatran subspecies. Ground color of the upperside of both wings black with a strong greenish blue metallic tone, which



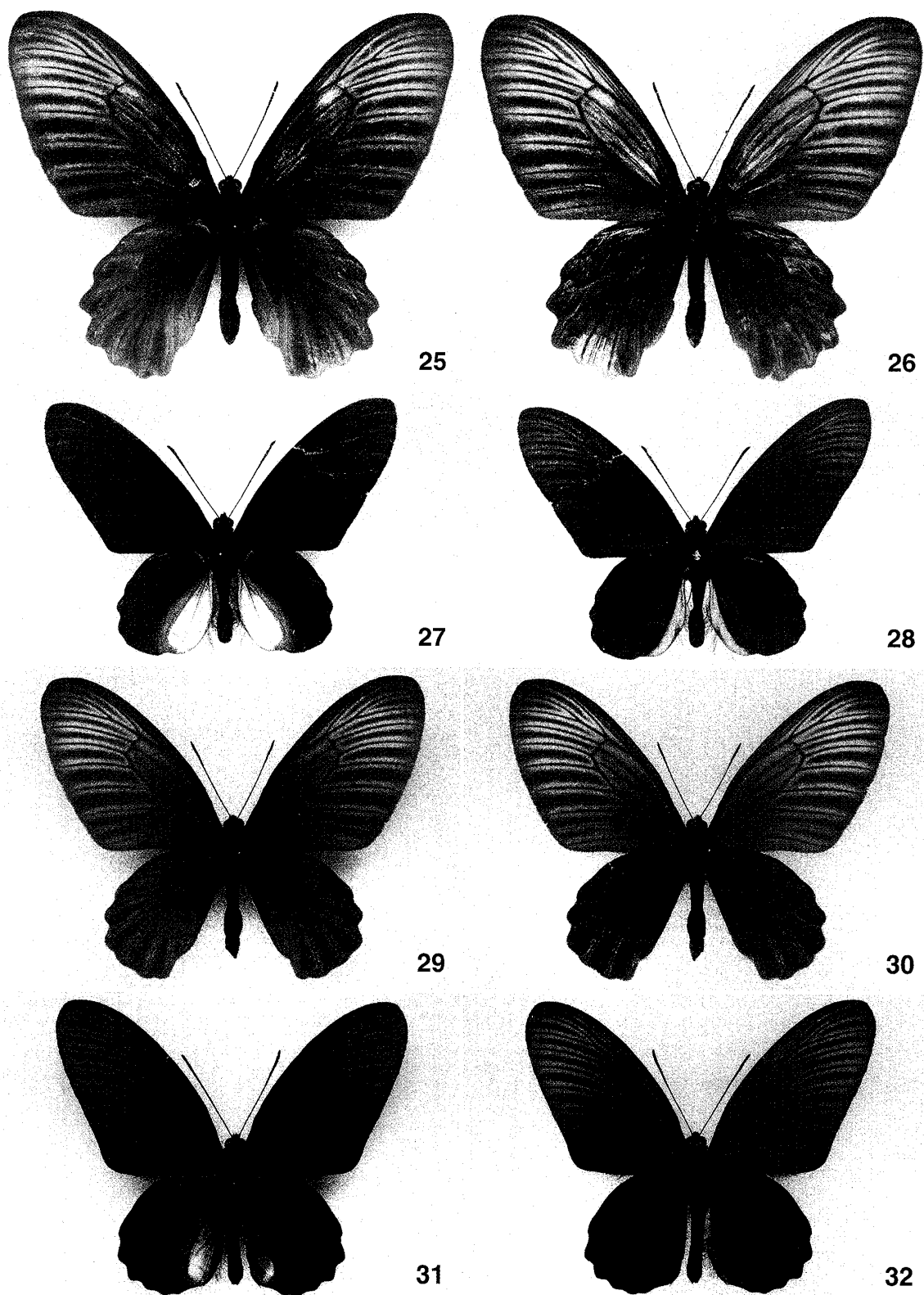
Figs 1-8. *Atrophaneura nox* subspecies. 1-2. *A. n. erebus*, ♂ (2: underside). 3-4. *Ditto*, ♀ (4: underside). 5-6. *A. n. henricus*, ♂ (6: underside). 7-8. *Ditto*, ♀ (8: underside).



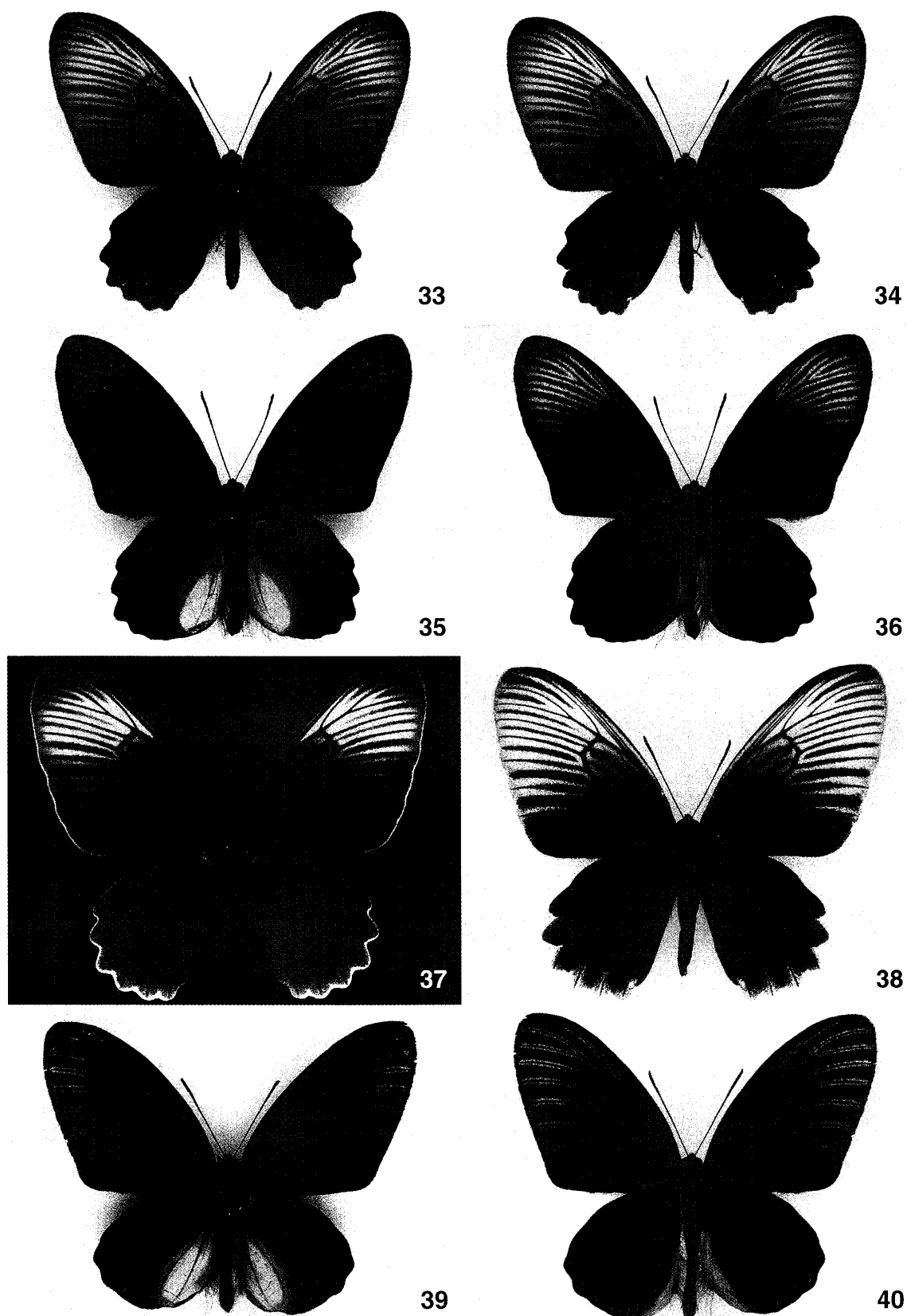
Figs 9–16. *Atrophaneura nox* subspecies. 9–10. *A. n. tungensis*, ♂ (10: underside). 11–12. *Ditto*, ♀ (12: underside). 13–14. *A. n. solokanus*, ♂ (14: underside). 15–16. *Ditto*, ♀ (16: underside).



Figs 17–24. *Atrophaneura nox* subspecies. 17–18. *A. n. petronius*, ♀ (18: underside). 19–20. *A. n. hirokoae* ssp. nov., ♂, paratype (20: underside). 21–22. *Ditto*, ♀, holotype (22: underside). 23–24. *A. n. smedleyi*, ♂ (24: underside).



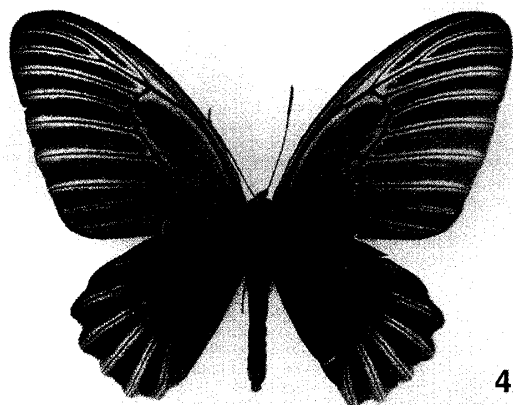
Figs 25–32. *Atrophaneura nox* subspecies. 25–26. *A. n. smedleyi*, ♀ (26: underside). 27–28. *A. n. mirifica*, ♂ (28: underside). 29–30. *Ditto*, ♀ (30: underside). 31–32. *A. n. nox*, ♂ (32: underside).



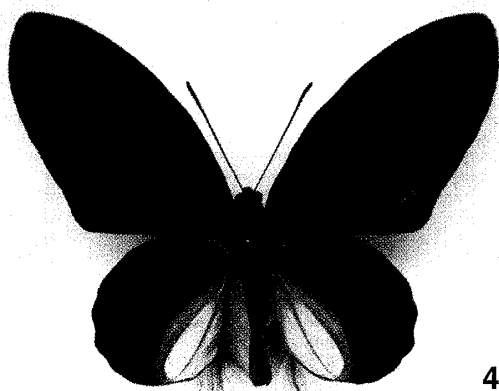
Figs 33–40. *Atrophaneura nox* subspecies. 33–34. *A. n. nox*, ♀ (34: underside). 35–36. *A. n. nyx*, ♂ (36: underside). 37–38. *Ditto*, ♀ (38: underside). 39–40. *A. n. noctula*, ♂ (40: underside).



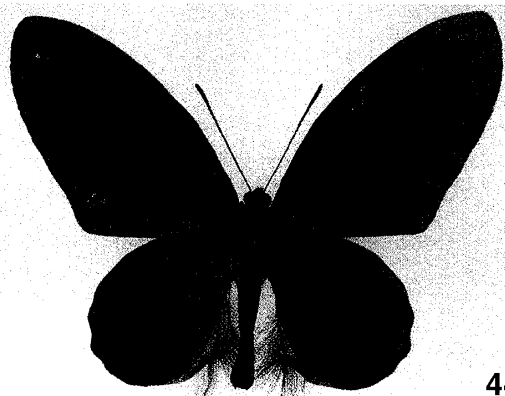
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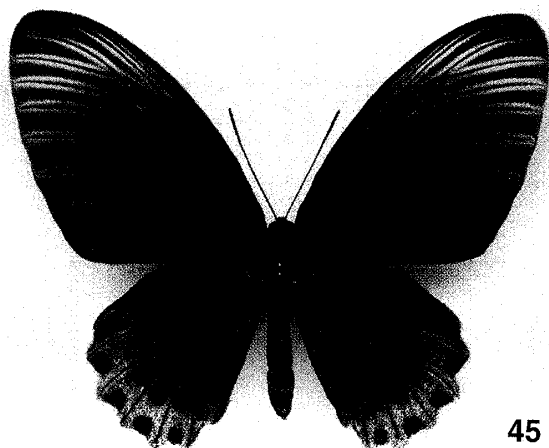
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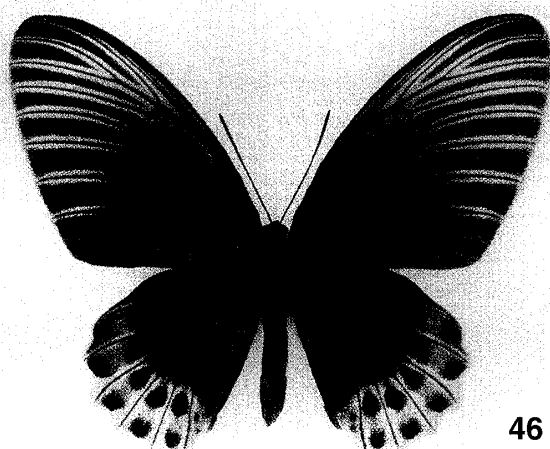
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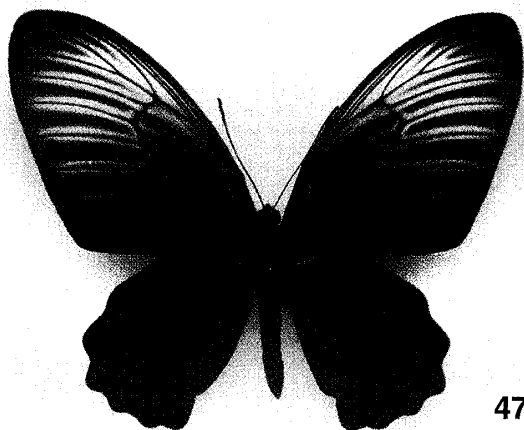
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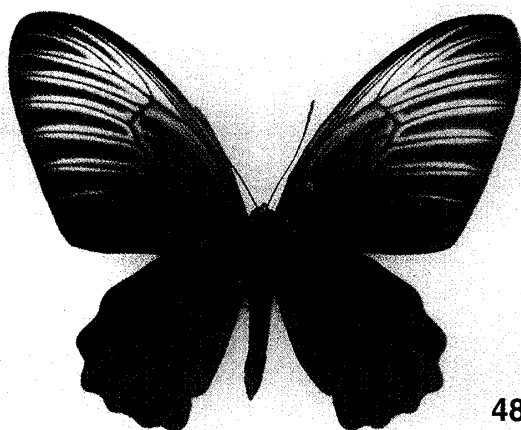
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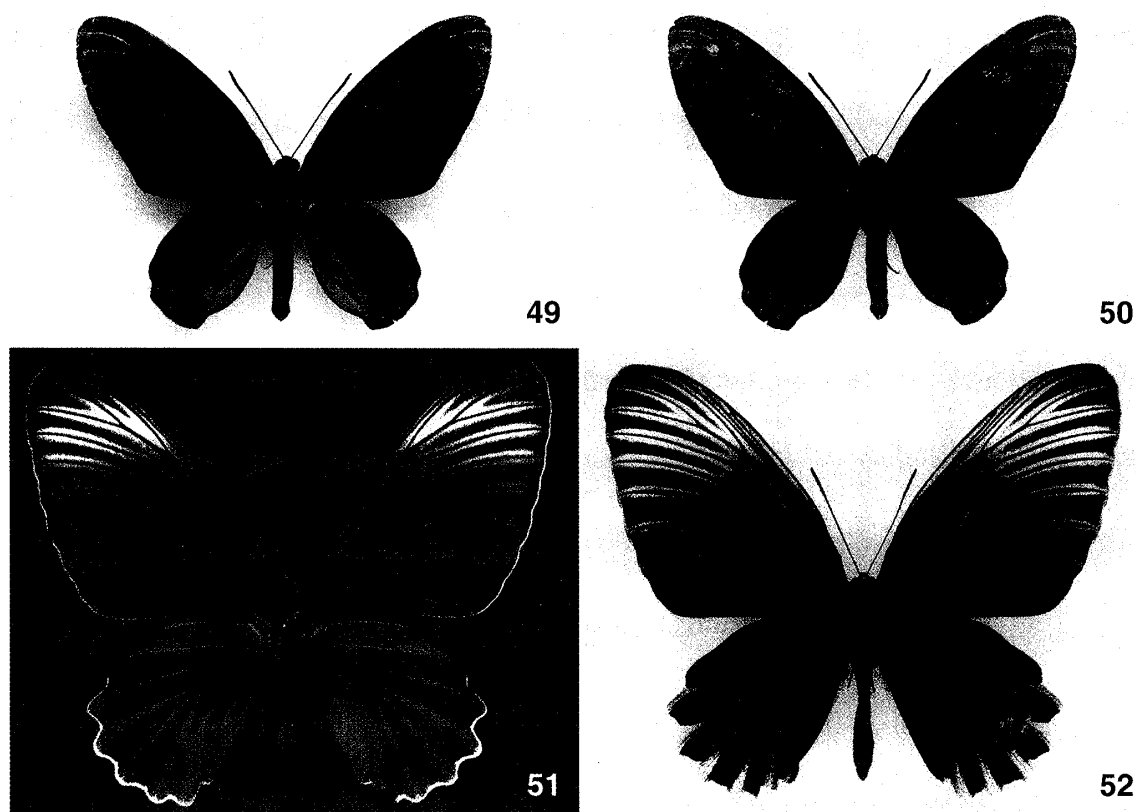


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Figs 49–52. *Atrophaneura nox miekoae* ssp. nov. 49–50. ♂ (50: underside). 51–52. ♀, holotype (52: underside).

extends to almost all the area in the hindwing and is strongly tinged with green. Underside of both wings basically black, but the forewing with no strong tendency to be whitened along the veins. This character is different from other Sumatran subspecies.

♀. Length of forewing 55–60 mm, almost the same as the Malayan and Sumatran subspecies. Forewing wide and round, with the pale vein-stripes limited around the apex, not spreading to the whole area as in the Sumatran subspecies. Upperside of hindwing with a metallic tone extending to the margin and strongly tinged with greenish blue. Underside of both wings basically light black, whitened along the veins in the apex in the forewing and along outer margin in the hindwing.

Specimens examined. Holotype. ♀, Tuangku Is., Banyak Isls, Indonesia, April, 1992, now in the collection of Masashi Hirata, will be deposited in Kitakyushu Museum of Natural History and Human History. Paratypes. 5 ♂ 4 ♀, the same data as holotype, all in the collection of Masashi Hirata. Other specimens. 2 ♂ 1 ♀, the same data as holotype.

Distribution. Tuangku Is., the Banyak Isls.

Remarks. The Banyak Isls are small and located on the western side of Sumatra between Simeulue Is. and Nias Is., and the new subspecies, *hirokoae*, was found from Tuangku Is.

Figs 41–48. *Atrophaneura nox* subspecies. 41–42. *A. n. noctula*, ♀ (42: underside). 43–44. *A. n. noctis*, ♂ (44: underside). 45–46. *Ditto*, ♀ (46: underside). 47–48. *A. n. banjermasina*, ♂ (48: underside).

Both males and females have similar characters to the Malay Peninsular subspecies, *erebus*, rather than the Sumatran subspecies, *henrix*, *tungenis* and *solokanus*, and that from Nias, *petronius*. The new subspecies is readily distinguished from the Sumatran and Nias' subspecies by the stronger metallic tone on the upperside of the wings in the male and also by the stronger metallic tone and less developed whitened area in the female (limited only in the forewing apex and the hindwing marginal area). From the Malay Peninsular subspecies, *erebus*, the new subspecies is distinguished by the greenish tinge in the metallic tone in both sexes and in the female by the wide expansion of the metallic greenish blue area (on the hindwing, not only the area along the veins, but to the outer margin), and by the less developed whitened areas along veins in the underside of the forewing.

It is very interesting that this new subspecies has more similar characters to the Malay Peninsular subspecies than the Sumatran ones though the geographic location is further from the Malay Peninsula.

We select the female as holotype of the new subspecies because the female has clearer subspecific characters than the male. In our personal opinion, *hirokoae* is one of the most beautiful subspecies in this species.

Etymology. The subspecific name, *hirokoae*, is dedicated to Mrs Hiroko Toyoda, wife of Dr Shoichiro Toyoda who seeks to establish friendly relations between Indonesia and Japan.

### The *smedleyi* subspecies group

Constitution and specimens examined. *A. n. smedleyi* (Jordan, 1937) (the Mentaway Isls), 2 ♂ 1 ♀ (Figs 23–26); *A. n. mirifica* Hanafusa, 1994 (the Batu Isls), 3 ♂ 3 ♀ (Figs 27–30).

Range. Mentaway.

Males resemble the Malay-Sumatra group, but are smaller in size and have a very light metallic tone on the upperside of the wings. Females resemble N. and S. Sumatran subspecies in the forewings whitened along the veins, but can easily be distinguished by the lack of a metallic tone on the upperside of the wings and by the brown ground color. In this group, two subspecies are included: *smedleyi* from the Mentaway Isls and *mirifica* from the Batu Isls, but there is no major difference and we think their subspecific relationship should be revised.

### The *nox* subspecies group

Constitution and specimens examined. *A. n. nox* (Swainson, 1823) (Java), 6 ♂ 10 ♀ (Figs 31–34); *A. n. nyx* (Nicéville, 1897) (Bali Is.), 9 ♂ 9 ♀ (Figs 35–38).

Range. Java and Bali Is.

Both male and female are smaller than other subspecies groups, and lack the metallic tone on the upperside of both wings, being the plainest members of this species. Males have a long and wide white patch around the apex of the forewing. Females have a brown to dark brown ground color, and have a large white patch around the apex of the forewing as in males. Though the female from E. Java has a lighter ground color than those from W. Java, we consider that the Javanese specimens are to be placed in one subspecies, *nox*. The subspecies from Bali Is., *nyx*, is basically similar to Javanese *nox*, but it can easily be distinguished by the white band along the outer margin of the hindwing in the female.

### The *noctis* subspecies group

Constitution and specimens examined. *A. n. noctis* (Hewitson, 1859) (W. Borneo), 9 ♂ 9 ♀ (Figs 43–46); *A. n. noctula* (N. Borneo), 7 ♂ 8 ♀ (Figs 39–42); *A. n. banjermasina* (Fruhstorfer 1899) (S. Borneo, Lout Is.), 6 ♀ (Figs 47–48); *A. n.* subsp. nov. described below (Singkep Is.), 2 ♂ 2 ♀ (Figs 49–52).

Range. Borneo, Singkep Is.

In “*Butterflies of the South East Asian Islands*” vol. 1, Tsukada and Nishiyama (1982) classified Bornean *A. nox* into two subspecies, one ranging in the northern part and the other in the south, and they assigned ssp. *noctis* to the N. Bornean subspecies and ssp. *banjermasina* to S. Bornean one. We consider that the specimens from Pontianak to Sarawak, W. Borneo, should be treated as another subspecies based on the following discriminating points. In the N. Bornean population, the male has a strong deep blue metallic tone on the upperside of the wings, and is unique and beautiful; the female has a brown ground color without metallic tone, and both wings become lighter along all veins. This wing pattern in the female is unique among all subspecies. In the W. Bornean population, the male has black wings without a deep blue metallic tone; the female also has a brown ground color without metallic tone as in the N. Bornean population, and has a wide light brown band along the outer margin in the hindwing. This female is the largest in all subspecies. The sole available species-group name for the N. and W Bornean subspecies is *noctis* (Hewitson, 1859), but we cannot clarify its exact type locality other than “Borneo”, and we cannot show the features of type specimens. According to Jordan (1910) in *Seitz*, the external features shown as *noctis* completely match the W. Bornean specimens before us, and those of f. *noctula* (Westwood, 1872) and f. *strix* (Westwood, 1872) agree with our N. Bornean males and females, respectively. These two forms were originally described as two distinct species in the same work as follows.

*Papilio noctula* Westwood, 1872, *Trans. ent. Soc. Lond.* **1872**: 90, pl. 4, fig. 3.

*Papilio styx* Westwood, 1872, *Trans. ent. Soc. Lond.* **1872**: 90, pl. 4, fig. 4.

Since Fruhstorfer (1898) selected *noctula* as a subspecific name and his choice is valid as an act of the first reviser, we tentatively apply the name of *noctis* to the W. Bornean subspecies and adopt the name of *noctula* for the N. Bornean subspecies. Both male and female from S. Borneo, *banjermasina*, have a rather weak metallic tone on the upperside of the wings. Specimens from Singkep Is. are similar to S. Bornean subspecies, though Singkep Is. is located very near to Sumatra, and below we describe a new subspecies for them based on some differences.

### *Atrophaneura nox miekoae* ssp. nov. (Figs 49–52)

♂. Length of forewing 47 mm, almost same as the Malayan and Sumatran subspecies. Rather similar to the Malay Peninsular subspecies, but ground color black, with a metallic tone from the tornus of the forewing to the hindwing on the upperside. Underside ground color black, not whitened along the veins.

♀. Length of forewing 60 mm, almost the same as the S. Bornean subspecies, to which the female is rather similar. Both fore- and hindwings black, with a white patch around the apex of the forewing. Hindwing with a metallic tone along the veins as in the S. Bornean subspecies on the upperside. A white line running along the distal margin of the hindwing. This unique character is almost as same as in the Bali subspecies, and the same tendency appears on the underside.

Specimens examined. Holotype. ♀, Singkep Is., Indonesia, Oct. 1995, now in the collection of Masashi Hirata, will be deposited in Kitakyushu Museum of Natural History and Human History. Other specimens. 2 ♂ 1 ♀, same data as holotype.

Distribution. Singkep Is.

Remarks. Singkep Is. is located on the eastern side of C. Sumatra and just south of Lingga Is. Despite its close location to Sumatra, the male of the new subspecies is similar to the Malayan subspecies, and the female is similar to the S. Bornean subspecies. Compared with the Sumatra subspecies, the male has a definite metallic tone on the upperside as in the Malay Peninsular subspecies, and the female has a weak metallic tone without the tendency of whitening along the veins in the hindwing. Compared with S. Bornean subspecies, the new subspecies can easily be distinguished by the smaller white patch on the forewing (this white patch extends to almost half the area of the forewing in S. Bornean subspecies) and the unique white line along the distal margin of the hindwing.

Etymology. The subspecies name, *miekoae*, is dedicated to Ms Mieko Hirata, wife of Hirata, one of the authors.

### A check list of subspecies of *Atrophaneura nox*

The following alphabetical list of the subspecific names is compiled mainly following Bridges (1988). For some subspecies, we have not checked the original descriptions nor syntypes (or holotypes) at the present time. Geographical distribution of *Atrophaneura nox* subspecies is also figured (Fig. 53).

*Atrophaneura nox banjermasina* (Fruhstorfer 1899) (Figs 47–48)

*Berl. ent. Z.* **43**: 427. (*Papilio*)

*Atrophaneura nox erebus* (Wallace, 1865) (Figs 1–4)

*Trans. Linn. Soc. Lond.* **25**: 41. (*Papilio*)

*Atrophaneura nox henricus* (Fruhstorfer, 1899) (Figs 5–8)

*Berl. ent. Z.* **43**: 425. (*Papilio*)

*Atrophaneura nox hirokoae* Hirata et Miyagawa, ssp. nov. (Figs 19–22)

Described in this paper.

*Atrophaneura nox miekoae* Hirata et Miyagawa, ssp. nov. (Figs 49–52)

Described in this paper.

*Atrophaneura nox mirifica* Hanafusa, 1994 (Figs 27–30)

*Futao* **16**: 16, figs 4–6.

*Atrophaneura nox noctis* Hewitson 1859 (Figs 43–46)

*Proc. zool. Soc. Lond.* **1859**: 423, pl. 66. (*Papilio*)

*Atrophaneura nox noctula* (Westwood, 1872) (Figs 39–42)

*Trans. ent. Soc. Lond.* **1872**: 90, pl. 4, fig. 3. (*Papilio*)

=*Papilio styx* Westwood, 1872, *Trans. ent. Soc. Lond.* **1872**: 90, pl. 4, fig. 4.

*Atrophaneura nox nox* (Swainson, 1823) (Figs 31–34)

*Zool. Illustr.* (1) **2** (20): pl. 102. (*Papilio*)

*Atrophaneura nox nyx* (Nicéville, 1897) (Figs 35–38)

*Ann. Mag. nat. Hist.* (6) **20**: 226. (*Papilio*)

*Atrophaneura nox petronius* (Fruhstorfer, 1901) (Figs 17–18)

*Societas ent.* **16**: 89. (*Papilio*)

*Atrophaneura nox smedleyi* (Jordan, 1937) (Figs 23–26)

*Novit. zool.* **40**: 316. (*Papilio*)

*Atrophaneura nox solokanus* (Fruhstorfer, 1902) (Figs 13–16)

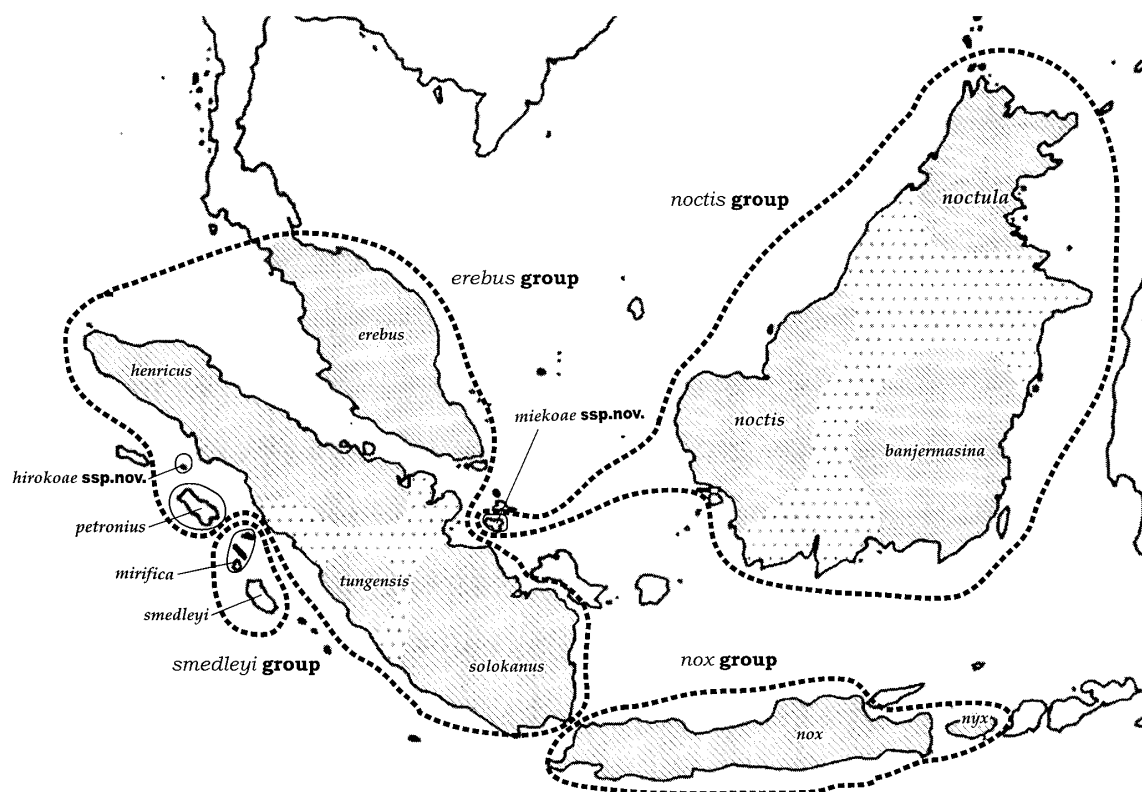


Fig. 53. Distribution map of *Atrophaneura nox* subspecies.

*Dt. ent. Z. Iris.* **15**: 310. (*Papilio*)

*Atrophaneura nox tungensis* Zin et Leow, 1982 (Figs 9–12)

*Malay. Nat. J.* **35**: 285–290, figs a, b.

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## 摘 要

### *Atrophaneura nox* の亜種群についての再検討と2新亜種の記載 (平田将士・宮川 崇)

*Atrophaneura nox* (Swaison, 1823) は、インドネシアのジャワ島から原名亜種が記載された。マレー半島からボルネオ、スマトラ、ジャワとそれらの島々の近辺の島嶼に至る広範な分布域を持ち、地理的変異が著しいことから、現在11亜種に分類されている。筆者らはそれらの亜種の再検討を行い、更にバニャック諸島とシンケップ島の2地域に産する個体群を新たに2つの亜種として記載する。また、既に記載されている11の亜種について、下記3点の変更を提案する。

1点目として、海南島から記載された *A. nox hainaneusis* Gu, 1997 は記載図から判断する限り、*A. varuna astorion* (Westwood, 1842) のシノニムである。2点目として、中部スマトラから新種として記載された *A. tungensis* Zin et Leow, 1982 は、♂の形状が *A. nox* の北部スマトラ亜種 *A. nox henricus* (Fruhstorfer, 1898)、同南部スマトラ亜種 *A. nox solokanus* (Fruhstorfer, 1902) と殆ど差がないこと、この両亜種と分布域が重ならないことから、独立種ではなく、*A. nox* の一亜種と思慮する (*A. nox tungensis* Zin et Leow, 1982, stat. nov.)。3点目としては、北ボルネオに産する個体群を西部ボルネオ産、南部ボルネオ産と区別して、新たな亜種とすることを提唱する。「ザイツ」の中で Jordan (1910) は北部ボルネオの中に2つの型が存在することを記しており、1つは *A. nox noctis* (Hewitson, 1859) であり、もう1つは♂を *f. noctula* (Westwood, 1872)、♀を *f. strix* (Westwood, 1872) としている。筆者らが実見している標本では、西部ボルネオからもたらされるものが Jordan の示している *noctis* に合致するものであり、北部ボルネオ産♂が *f. noctura* に、♀が *f. strix* に該当する。また、亜種の *noctis* の正確な原記載産地が筆者らにとっては「ボルネオ」以上に詳細には判らないことから、当報文では西部ボルネオ産に *noctis* を充てる。更に、Westwood (1872) によって同時に提唱された2つの名称については、地理的な相異に言及していないものの、既に Fruhstorfer (1898) が *noctula* を種名として使用しているため、筆者らは北部ボルネオ産に *noctula* を充てることを提唱する。

これらの所見をふまえ、筆者らは *A. nox* を *nox* グループ、*smedleyi* グループ、*erebus* グループ、*noctis* グループの4グループに大別し、各々のグループの特徴を考察した。なお、新たな2亜種の特徴は後述の通りである。

### *Atrophaneura nox hirokoe* Hirata et Miyagawa, ssp. nov. (Figs 19-22)

バニャック諸島に産する。バニャック諸島は、北部スマトラ島の西側に位置し、北をシムルエ島、南をニアス島に挟まれた、小さな島嶼群である。今回記載する新亜種は、このバニャック諸島中の Tuangku 島より得られたもので、筆者の所有する5♂5♀に基づいたものである。♂♀ともに近接する北部スマトラ産、ニアス産の亜種よりも、マレー半島産のものに近似した特徴を持つ。すなわち、スマトラ産、ニアス産と比べ、♂では翅表により強い金属光沢を持つこと、♀では翅表により強い金属光沢を持ち、前翅翅脈に沿った白化が前翅端部にとどまること、また、後翅の白化は外縁部のみで翅脈に沿って全体的に白化しないことで容易に区別される。マレー半島産と比較すると、♂♀ともに翅表により強い金属光沢を持ち、色調が強く青緑色を帯びる。♀では、特に後翅の光沢部がより広く発達し、翅脈に沿った部分にとどまらず、後翅全体に拡がる。また、前翅裏面の翅脈に沿った白化が全体的に拡がらないことで区別される。バニャック諸島は、マレー半島からはスマトラ島を隔てているにも拘わらず、こうした特徴を持つことはとても興味深い。なお、この亜種名 *hirokoe* はインドネシアと日本との友好関係の樹立に尽力された、トヨタ自動車(株)取締役名誉会長 豊田章一郎氏の令夫人である豊田博子氏に献名されたものである。

*Atrophaneura nox miekoae* Hirata et Miyagawa, ssp. nov. (Figs 49–52)

シンケップ島に産する。シンケップ島は、中部スマトラ島の東、リング島のすぐ南に位置する。地理的な位置はボルネオ島よりスマトラ島に近いが、今回記載した亜種はスマトラに産するものよりも寧ろ♂ではマレー産に、♀では南部ボルネオ産に近い特徴を持つ。すなわち、♂においてはマレー半島のように金属光沢を持ち、♀においてはスマトラ産と比べると金属光沢は弱く、後翅翅脈に沿った白化傾向が無いことから容易に区別される。南部ボルネオ産との比較においては、♀の前翅端部の翅脈に沿った白化によって形成される白斑が小さいこと(当亜種は前翅端にとどまるが、南部ボルネオ産は前翅表半分程度拡大する)、後翅外縁部に顕著な白化部分があることで区別される。なお、この亜種名 *miekoae* は、筆者の1人、平田の妻実江子に献名されたものである。

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